

# PATENT SPECIFICATION

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DRAWINGS ATTACHED.

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## COMPLETE SPECIFICATION.

### Frozen Confection and Method for the Manufacture thereof.

We, GENERAL FOODS CORPORATION, a Corporation organized under the laws of the State of Delaware, United States of America, of 250 North Street, White Plains, State of New York, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to frozen confection generally and more particularly to a frozen confection adapted to be mixed with an aqueous liquid and to a process for preparing a carbonated, frozen dessert-containing beverage by adding said frozen confection to an aqueous liquid.

A favorite beverage enjoyed by many for a number of years is a carbonated, frozen dessert-containing beverage, typically an ice cream soda. Such beverage, which is generally available at soda fountains, is usually prepared by first mixing a syrup containing flavoring and sweetening ingredients with carbonated water and then adding a frozen dessert, typically ice cream, thereto. Fruit and/or a topping of whipped cream or the like may also be added to the beverage but such is ordinarily not essential. In the home, preparation of such beverage is frequently a difficult task. When one employs carbonated water in the home preparation of such beverage, e.g. an ice cream soda, the mixing required to blend the syrup with the carbonated water frequently results in rapid loss of carbonation. As a consequence, the beverage is flat and insipid and deemed objectionable by many.

There is therefore a need for a frozen confection adapted to be readily mixed with an aqueous liquid for the preparation of a

carbonated, frozen dessert-containing beverage, specifically, an ice cream soda either in commercial establishments or in the home.

It has now been found that a frozen confection can be prepared which is adapted to be mixed with an aqueous liquid for the preparation of a carbonated, frozen dessert-containing beverage, which confection has as an essential element thereof a source of carbonation which is capable of melting and of producing a desirable level of carbonation within said liquid upon mixing therewith. Said frozen confection may be readily packaged and easily handled in mass distribution channels.

According to the present invention, there is provided a frozen confection adapted to be mixed with an aqueous liquid to produce a beverage comprising a frozen body capable of melting and of producing carbonation of said liquid upon mixing therewith, and a frozen dessert body. Thus, a confection has been found which permits such a beverage to be prepared in commercial establishments and in homes simply by adding the frozen confection of this invention to an aqueous liquid.

Among the numerous advantages of the present invention, the following will be readily apparent: the frozen confection may be and advantageously is, contained within a single package; a source of carbonated water such as that utilized for the preparation of such beverage, e.g., an ice cream soda, in commercial establishments and in the home is dispensed with; the frozen confection may be sold or distributed through ice cream stores, ice cream wagons, dairies, supermarkets, drug stores, and the like; the frozen confection may be readily stored in commercial or home freezers.

[Price 4s. 6d.]

A critical feature of the frozen confection of this invention is the frozen body which is capable of melting and producing carbonation within an aqueous liquid when admixed therewith. It is, therefore, essential that such frozen body be maintained in a frozen state until its point of end use so that the desired rate of cooling of the aqueous liquid and the desired level of carbonation are obtained in the aqueous liquid with which it is admixed. Also such frozen body should have good storage stability and good carry-home stability. Further, such frozen body must be one which does not impart any substantial off-taste to carbonated, frozen dessert-containing beverage while the desired results of carbonating and cooling the aqueous liquid are being achieved.

By incorporating in the frozen confection a frozen body capable of producing carbonation on melting it is found that when the confection is added to an aqueous liquid, carbonation is produced within said liquid and, since said frozen body is at a lower temperature than the aqueous liquid, said aqueous liquid is cooled resulting in an extremely palatable and refreshing beverage whose taste is enhanced because of the frozen dessert body as well as flavoring and sweetening ingredients which are also advantageously present.

The term "frozen dessert" as employed herein is intended to cover ice cream, frozen custard, french ice cream, frozen custard ice cream, ice milk, fruit sherbets and the like; and such frozen dessert may be any of those commercially available. When ice cream is employed as the frozen dessert body of the frozen confection of this invention for the preparation of a carbonated frozen dessert-containing beverage such as an ice cream soda, it will be generally prepared from an ice cream mix consisting essentially of a mixture of dry milk solids, cream or milk fat, and sugar. An average finished ice cream may contain about 12% or more butterfat, 10% dry milk solids, and 16% sugar by weight but such proportions vary with trade requirements and stated regulations. In the production of ice cream, small portions of stabilizers and/or emulsifiers such as caseinates, agar agar, sodium alginate, sodium carboxymethylcellulose, calcium sulfate, gum acacia, guar seed gum, Irish moss, locust bean gum, gum karaya, oat gum, gum tragacanth, gelatin, lecithin, polyoxyethylene sorbitan tristearate, polyoxyethylene sorbitan monooleate; and monoglycerides or diglycerides or both of fat-forming fatty acids or propylene glycol alginate are usually added to the ice cream mix to produce ice cream having a smooth body and to prevent the growth of ice crystals in storage.

Although not absolutely essential, flavoring and sweetening ingredients are also desir-

ably incorporated within the frozen confection. Preferably, such flavoring and sweetening ingredients are incorporated in the frozen carbonating body since it is especially desired that the body contain freezing point depressants. Thus, the freezing point of the frozen elements should be below about 30°F. and, preferably, between about 20°F. to about 25°F.

However, flavoring and sweetening ingredients may also partially or completely surround or coat the frozen dessert body. Preferably, the flavoring and sweetening ingredients are in plastic or semisolid form, e.g., as a syrup which does not set to a hard solid at the temperature of storage, usually 0°F. Preferably the syrup has a hardening point below -10°F. Thus when the flavoring and sweetening ingredients are placed in contact with the aqueous liquid, they thereupon dissolve and serve to flavor and to sweeten the aqueous liquid and at the same time permit the frozen body to melt and to produce carbonation of the aqueous liquid more readily.

Referring to the term, syrup, as used in the present invention, by syrup is meant a composition that is semisolid or liquid at room temperature and that contains a sweetening agent, which may be sugar or artificial sweetening agents or combinations of both. The syrup will generally also contain flavoring ingredients such as chocolate, cocoa, vanilla, coffee, strawberry, and the like, and a viscosity agent such as gum arabic, gum karaya, gelatin and the like. Other ingredients will be those which are normally present in commercial syrups.

The flavor strength, degree of sweetness, or sugar content, freezing point, viscosity, color, kind of flavor, acid content and degree of stabilization (as by the use of gums) of the syrup comprising the flavoring and sweetening ingredients may all be suitably adjusted, as desired, as will be apparent to those skilled in the art.

The flavoring and sweetening ingredients may be any of those conventionally used in food art, and especially in the frozen dessert art. Thus, natural and artificial flavors which may be employed include chocolate or cocoa, vanilla, coffee, strawberry, various fruit and fruit juices, and the like. Such flavors may be admixed with or encapsulated with any of a wide variety of water soluble substances including natural and artificial gums such as gum acacia, gum arabic, guar gum, gum karaya, gelatin and cellulose derivatives such as methylcellulose, carboxymethylcellulose, and hydroxyethylcellulose. Other emulsifiers and stabilizers such as those recited as useful hereinbefore in the preparation of ice cream may also be utilized.

Natural and/or artificial sweeteners are desirably incorporated in the confection to-

gether with the aforementioned flavoring ingredients or ingredients. Included among such sweeteners are cane sugar, sucrose, glucose, corn sugar, dextrose, invert sugar, maple sugar, lactose, alkali or alkaline earth metal cyclamates, saccharin and sorbitol, and mixtures thereof may all be readily utilized.

It is also usually advantageous to include a permitted soluble dye with the flavoring ingredients to improve the color of the finished carbonated, frozen dessert-containing beverage. Buffering agents such as mono and disodium citrates to stabilize pH may also be used.

Typically, the aqueous liquid with which the frozen confection of this invention is admixed is water. However, if a carbonated frozen dessert containing beverage is desired having a higher level of carbonation or of flavoring and sweetening, the frozen confection may be admixed with soda water or a conventional carbonated soft drink beverage. If a beverage is desired having a richer milk flavor, the frozen confection may be admixed with skim milk, milk, or mixtures thereof with water.

Generally the shape of the frozen body i.e., the frozen elements, and of the frozen dessert is not especially critical. Depending upon the packaging equipment available, the type and size of container, etc., either or both the frozen body and frozen dessert body may be in the form of a cylinder, sphere, cube or ellipsoid. However, it has been found especially advantageous to position the frozen body capable of melting and of producing carbonation and the frozen dessert body within the container in such a manner as to result in contact of the aqueous liquid with the frozen body prior to contact of the aqueous liquid with the frozen dessert body. As a consequence, the frozen dessert body serves to keep the frozen body, which is of lower density, submerged in the aqueous liquid, thereby resulting in more effective cooling and carbonation of the liquid.

The frozen confection may be packed in any suitable, conveniently sized container fabricated from paper, plastic, glass, metal or the like.

In preparing a carbonated, frozen dessert-containing beverage, typically an ice cream soda, from the frozen confection of this invention, a consumer may take a single package containing a frozen suitably shaped unit of ice cream and a frozen suitably shaped body capable of melting and of producing carbonation upon admixing with an aqueous liquid. The ice cream may be positioned between two elements of said body where, as hereinafter described, two elements are employed. The body can contain flavoring and sweetening ingredients. The consumer then places the contents of the package in a container, e.g. a glass, to which has previ-

ously been added ordinary tap water. Upon contact with water, the frozen body melts, serving to cool the water and simultaneously effervescence of the liquid results by the production of carbon dioxide within the liquid from the reaction of the acid and the base. After a suitable period of time usually after 60 seconds the contents of the glass are stirred in order to achieve uniform dissolution and distribution of the flavoring and sweetening ingredients within the now cooled carbonated liquid.

In one form of the invention the frozen body is carbonated ice. The carbonated ice which is employed in this form of the invention should be one which is characterized by a high carbon dioxide content and high degree of stability under conditions of manufacture and storage. A particularly useful carbonated ice is that which is described in Barnes et al. U.S. Patent 2,975,603 and which contains in excess of 25 milliliters of carbon dioxide per gram of ice. The carbonated ice product disclosed therein is especially well suited for the preparation of a carbonated, frozen dessert-containing beverage utilizing the invention concept herein since the level of carbon dioxide produced during the contact and mixing of the carbonated ice with an aqueous liquid is within an acceptable range, i.e., said liquid will ordinarily contain about one milliliter of carbon dioxide per gram of aqueous liquid. It should be mentioned, however, that carbonated ice having present therein lesser volumes of carbon dioxide than those specified in the aforementioned U.S. patent is also capable of utilization. Such carbonated ice is advantageously used for the preparation of carbonated, frozen dessert-containing beverages wherein a lower level of carbonation or effervescence is desired. Thus, carbonated ice, whether it be in the form of a mere encapsulation of carbon dioxide in water or in the form of a clathrate of hydrate of carbon dioxide and water, may also find use. Thus, carbonated ices having at least about 10 ml. of carbon dioxide per gram of ice are also quite useful and are intended to be included within the scope of the term carbonated ice.

In another form of the invention the frozen body consists of the frozen elements of an acid solution and a base solution. By the use of a pair of frozen elements there is secured upon melting and admixing, not only cooling of the aqueous liquid with which they are mixed but, at the same time, carbonation therein. Such elements comprise, in combination, a frozen acid solution and a frozen base solution. If desired, such frozen elements may be readily prepared by freezing a first solution containing carbonate or bicarbonate ions and a second solution containing hydrogen ions. The two solutions

are separately frozen and are later combined so as to produce and to retain in solution an amount of carbon dioxide greater than that which would ordinarily be present in a saturated solution of carbon dioxide and at the same temperature and pressure. The carbonate and bicarbonate ions may be obtained from any of a wide variety of carbonates and bicarbonates, for example, sodium bicarbonates, potassium bicarbonate, mixtures thereof, and the like. Hydrogen ions may be derived from any of a wide variety of organic acids, inorganic acids and compounds which in solution will release hydrogen ions. Illustrative organic acids include citric, tartaric, adipic and fumaric acids and water soluble salts thereof. Illustrative of inorganic acids is hydrochloric acid. Illustrative of compounds which will gradually release hydrogen ions in solution are lactones, for example, glucono delta lactone. Flavoring and sweetening ingredients can be incorporated in both elements, as well as any other freezing point depressants desired. Since it is essential that interaction of the acidic and basic materials does not take place until such time as the frozen elements containing the same are admixed with aqueous liquid so as to achieve an optimum level of carbonation in the aqueous liquid, the frozen body of acid solution and the frozen body of base solution should be maintained in a frozen condition during storage. The frozen elements need not be physically separated from one another as might be required if the acid and base were in a dry or liquid form. Preferably, however, the frozen elements are discrete and physically separated, for example, by a water ice barrier or by a layer of frozen dessert. Where the frozen confection is intended to be used in preparing an ice cream soda using a syrup, special problems may be involved.

A variety of syrups such as are necessary to produce ice cream sodas of different flavors are not generally maintained in the home. If they are, dispensing them is usually an untidy procedure, since the syrups are heavy bodied and tend to adhere to the spoon or other implement by means of which they are transferred to a glass containing carbonated water. As a consequence, home preparation of ice cream soda has always been at a low level.

According to the further embodiment of the invention the frozen confection that forms an ice cream soda with a suitable quantity of water, is comprised of a body of ice cream, a mass of syrup adhered to the ice cream, and a block of frozen body, preferably carbonated ice, likewise, adhered to the ice cream. The mass of syrup and the block of frozen body, while both being adhered to the ice cream, are out of contact with each other.

In a preferred form, the body of ice cream is cylindrical in shape and circular in cross section, although this particular shape is only preferred, not mandatory. The cylinder of ice cream has a block of carbonated ice adhered to one of the cylinder surfaces, while a major portion of the side surface of the cylinder is coated with syrup. The syrup is out of contact with the carbonated ice since it does not coat that end surface of the cylinder which is occupied, at least in part, by the carbonated ice. Still more preferably, the end of the cylinder opposite that end to which the carbonated ice is adhered is free of syrup, which is confined solely to the continuous, tubular side surface of the cylinder of ice cream and occupies at least 75 per cent of the side surface. However, a zone of the side surface adjacent to the cylinder end to which the carbonated ice is adhered remains free of syrup.

This embodiment of the confection can be made by a method in which a quantity of syrup is dispensed in a tubular container having one end open and the other end closed until the syrup forms a thick layer against the closed end thereof. Then a body of ice cream is put into the container and, since the ice cream has a specific gravity less than the syrup, the ice cream tends to float in the syrup, depending on the dimensions of the container and ice cream body. The ice cream displaces portions of the syrup upwardly and about the ice cream and the syrup is frozen and thereby maintained in its displaced position. As more specifically defined, a block of carbonated ice is placed on one end of the cylinder of ice cream and a cover disposed over one end of the container. Since the ice cream and carbonated ice carried by the ice cream float in the syrup and extend upwardly beyond the end of the container, placing the cover over the open end depresses the ice cream and carbonated ice to displace more syrup. If, as is most preferred, the combined height of the cylinder of ice cream and the cylinder of carbonated ice approximately equals the length of the container, putting the cover on the container will push the cylinder of ice cream against the closed end of the container and thereby displace all of the syrup to a position in which it coats a major portion of the side surface of the cylinder of ice cream. Thus, all the syrup is located adjacent to the side surface of the ice cream.

This embodiment of the invention will now be illustrated with reference to the accompanying drawings in which:

Fig. 1 illustrates the first step in the preferred method of the embodiment in which syrup has been placed in a container;

Fig. 2 illustrates the second step of the method, in which a cylinder of ice cream has been placed in the container;

Fig. 3 illustrates the third step in which a block of carbonated ice has been placed atop the cylinder of ice cream in the container;

5 Fig. 4 is an elevational view, partly cut away, of a preferred, frozen confection and container according to our invention; and

10 Fig. 5 shows a preferred method of dispensing the frozen confection of Fig. 4 from its container.

Referring now to the drawing, and in particular to Fig. 4 thereof, a preferred embodiment is illustrated therein. In that Figure it will be seen that an elongated tubular container designated generally by reference 10 is formed with a side wall 11, a closed end having a bottom 12 and an initially open end indicated generally at 13. Within the container 10 is a mass of syrup, which surrounds a portion of a cylinder of ice cream that is positioned against the bottom 12 of the container 10. The cylinder of ice cream is substantially circular in cross section and has an elongated, continuous side surface. The mass of syrup occupies the space 14 between the side surface of the cylinder of ice cream and the side wall 11 of container 10. In such position the syrup contacts the side wall of the container and extends from the bottom 12 of the container upwardly as a continuous body to cover at least a major portion of the area of the side surface of the cylinder of ice cream, and preferably at least 75 per cent of the area of the side surface. That portion of the side surface of the cylinder of ice cream adjoining the upwardly extending end 15 of the cylinder is designated by reference number 16.

40 Contiguous with the end 15 of the cylinder of ice cream is a block of carbonated ice. The carbonated ice is in the form of a cylinder that is circular in cross section and has a diameter less than the diameter of the ice cream cylinder. As located on the upwardly extending end 15 of the ice cream cylinder, the margin of the block of carbonated ice is inset from the margin of the ice cream cylinder. Preferably the block of carbonated ice is axially aligned with the ice cream cylinder.

55 The container top 17 is located at the initially open end 13 of the container 10 and effectively closes off that open end. In its container closing position, the cover 17 is in direct contact with one end surface of the carbonated ice cylinder. Thus, it keeps the ice cream cylinder and carbonated ice block from projecting upwardly beyond the end 13 bounded by the container walls. As illustrated in Fig. 4, the dimensions of the ice cream cylinder and carbonated ice block are such that their combined height is substantially equal to the length of the cylinder 10 as measured from the upper surface of the

bottom 12 of that cylinder to the plane of the margins of the end 13 of the cylinder. As such, the ice cream cylinder is in direct contact with the bottom 12 of container 10 by means of one end surface of the ice cream cylinder, so that none of the syrup separates the end of the ice cream cylinder from the bottom 12 of the container. The confection shown in Fig. 4 is frozen in that form so that the syrup is solid and adheres to the side surface of the ice cream cylinder. Also, as frozen, the carbonated ice block adheres to the end of the ice cream cylinder, so that the entire frozen confection and its container present a unitary article the contents of which do not shift in transit.

The steps in the method of forming the packaged, frozen confection of Fig. 4 are illustrated in Figs. 1 to 3 of the drawing. In Fig. 1, the container 10 having a bottom 12, a continuous, circular side wall 11 and an open end 13 is shown with a mass of syrup located therein and disposed against the bottom 12 of the container. In Fig. 2 the container and syrup of Fig. 1 are illustrated with a cylinder of ice cream, generally circular in cross section, located within the container 10. As so disposed, the cylinder of ice cream floats in the mass of syrup so that the syrup is located beneath the ice cream cylinder and also in the space 14 between the cylinder of ice cream and the container side wall 11. With the ice cream cylinder of the size illustrated in Fig. 2, and the mass of syrup also shown therein, the ice cream cylinder will float and extend slightly below the open end 13 of container 10.

In Fig. 3 of the drawing, the same container 10 as illustrated in Figs. 1 and 2 is shown with a block of carbonated ice having been placed atop the upper end 15 of the ice cream cylinder. The carbonated ice is also circular in cross section and, while its added weight does depress the cylinder of ice cream somewhat in the mass of syrup, the block of carbonated ice extends somewhat above the plane of the margins of open end 13 of the container 10 and the ice cream cylinder has not been depressed to a point where it is in firm contact with the bottom 12 of the container. The cover 17 is then placed over the open end 13 of container 10 to result in the confection illustrated in Fig. 4 of the drawing, which is then brought to a temperature below about 0°F., preferably to about minus 10°F., to freeze the syrup and maintain the syrup in its displaced position.

125 Illustrated in Fig. 5 is one method of dispensing the frozen confection of this embodiment from its container 10. As shown, the container 10 is inverted and the thumbs of both hands are placed against the bottom wall 12 of the container and pressed in- 130

wardly. With the container inverted and cover 17 removed, the removable bottom wall 12 will be pushed in the direction of the open end 13 of the container 10. In so moving, the bottom will push the syrup, ice cream and carbonated ice from the container into a glass or other receptacle, which may have water in it or to which may then be added. In this position, the block of carbonated ice is immersed in the water and reacts with the water to liberate carbon dioxide gas. The gas bubbles up through the water or other aqueous liquid in the receptacle and forms a froth with the syrup and ice cream so that the drink resembles an ice cream soda prepared at a soda fountain. The syrup which coats the side wall of the ice cream cylinder is also immersed in the water and dissolves, thus providing sweetening, color and flavor to the ice cream soda formed. There is preferably no syrup on the end surface of the ice cream cylinder that contacted the bottom wall 12 of container 10. Thus, there is no syrup to dissolve from a location in which it will generally have to be forced under the water used to form the ice cream soda by means of a spoon or other implement, as the confection tends to float in water. After the bottom wall 12 has been pushed by the thumbs so that the syrup, ice cream and carbonated ice have fallen into the receptacle located beneath the frozen confection, the container 10 and its bottom wall are discarded.

Carbonated ice or a frozen body containing base and acidic ions can be employed. The shape of the body of ice cream is not critical to the present invention although, of course, it must have a shape which will fit within the container in which it is to be housed. Certain shapes are preferred, however, and a shape that is particularly preferred is that of a cylinder. By cylinder is not restrictively meant the volume generated by a rectangle rotated around one parallel side as an axis, but also an elongated tube, which, in cross section, is rectangular, pentagonal, hexagonal, etc., or has an irregular shape in cross section. The material from which the container is formed may be any of a wide variety, for example, paper, plastic, glass or metal.

The present invention, will now be illustrated by the following examples:

#### EXAMPLE I

Eighty grams of strawberry ice cream are sandwiched between two layers of water ices weighing 30 grams each. The composition of the ices is as follows:

Layer I—Acid ice:			
Citric Acid	...	...	0.46 grams
Tartaric Acid	...	...	0.72 grams
Strawberry syrup	...	...	10.00 cc.
(68% solids)	...	...	

Layer 2—Base ice:			
Sodium bicarbonate	...	...	0.59 grams
Potassium bicarbonate	...	...	0.59 grams
Foaming agent	...	...	
(milk protein)	...	...	0.50 grams
Vanilla syrup	...	...	10.00 cc.
(68% solids)	...	...	

The ices are made up to 30 cc. with water for a final concentration of 26% solids. The ices are then frozen to the ice cream. The frozen confection is then added to 150 ml. of room temperature water and the mixture is allowed to stand for five minutes.

The flavor and carbonation of this chemically carbonated soda compares favorably to a fountain prepared soda.

#### EXAMPLE II

Carbonated ice prepared by the process of Barnes et al. U.S. Patent 2,975,603 is ground to a size between 2 and 8 U.S. standard mesh and formed into briquettes under a pressure of 100—300 psig at a temperature of 5—15° F. The carbon dioxide content of the thus prepared briquettes is 40—50 milliliters/gram of ice.

A flavored and sweetened syrup is prepared by mixing:

Water	...	...	194.03 grams
Sugar	...	...	153.90 grams
Cocoa	...	...	29.15 grams
Vanilla Extract	...	...	3.39 grams
Sodium cyclamate/saccharin	...	...	
(3/1)	...	...	0.44 grams

Forty-five grams of the so prepared syrup are placed in a suitable cylindrical paper-board container and, immediately thereafter 55 grams of vanilla ice cream are placed within the container. The ice cream is placed in the container so as to result in the syrup surrounding the ice cream. Immediately thereafter a carbonated ice briquette weighing 18 grams is placed on top of the ice cream.

A glass vessel having a capacity of 12 fluid ounces is partially filled with 6 ounces of ordinary tap water having a temperature of 60°F. The contents of the container are then emptied into the vessel. After 60 seconds, the mixture is stirred to insure uniform distribution of the flavoring and sweetening ingredients.

The flavor and carbonation of the thus instantly prepared ice cream soda compares favorably to a fountain prepared soda.

#### EXAMPLE III

Carbonated ice containing about 35 ml. of carbon dioxide in gaseous form per gram of ice was prepared according to the process described in U.S. Patent No. 2,975,603 to

Barnes et al. A cylindrical briquette of this carbonated ice was formed.

A flavored and sweetened syrup was separately prepared, the syrup being obtained by mixing quantities of the following ingredients;

Water	...	...	...	194 grams
Sugar	...	...	...	154 grams
Cocoa	...	...	...	29 grams
Vanilla Extract	...	...	...	3 grams
Sodium Cyclamate-Saccharine	...	...	...	...
(3 to 1)	...	...	...	1.5 grams

Forty-five grams of chocolate syrup having the above formula were placed in a cylindrical, paperboard container. Then 55 grams of a cylinder of vanilla ice cream having a diameter substantially less than the diameter of the container was placed in the container and floated in the syrup. Then an 18 gram cylindrical briquette of carbonated ice was placed on top of the ice cream. The addition of the carbonated ice briquette, the diameter of which was less than the diameter of the cylindrical body of ice cream, tended to depress the body of ice cream to a point further within the mass of syrup. At this point the upper surface of the block of carbonated ice extended somewhat above the plane of the open end of the container. A plastic top was then placed over that opening and against the block of carbonated ice, pressing on the carbonated ice and depressing the cylinder of ice cream further into the container so that the cylinder of ice cream was forced against the bottom of the container. This resulted in displacement of all the syrup to a location between the side surface of the cylinder of ice cream and the side wall of the container. The container, ice cream, and carbonated ice were all in axial alignment. The confection was then frozen to a temperature of  $-10^{\circ}\text{F}$ .

The above process was carried out at room temperature, although the specific ingredients used were not at room temperature. While the carbonated ice was at a temperature of about  $0^{\circ}\text{F}$ ., the syrup, which was still mobile, was at about  $30^{\circ}\text{F}$ ., and the frozen ice cream was at a temperature of about  $20^{\circ}\text{F}$ .. Upon subsequent removal of the confection from the room temperature and lowering the temperature thereof to  $-10^{\circ}\text{F}$ ., the syrup likewise froze so that, upon inversion of the container, the syrup remained in a displaced position.

To make an ice cream soda from the confection so prepared, the cover of the container was removed, the container inverted, and inward pressure applied against the bottom of the container. A 12 ounce glass was positioned beneath the container and the carbonated ice, ice cream and syrup, all adhered together, were forced into the glass, the carbonated ice being deposited within the glass

container as the lowermost part of the confection. Six ounces of tap water at a temperature of about  $60^{\circ}\text{F}$ ., were then added to the glass receptacle and after a short wait, the confection was stirred. A small quantity of milk might have been added if a richer soda were desired. The chocolate ice cream soda produced bore a strong resemblance to an ice cream soda ordinarily procured at a soda fountain. During consumption of the ice cream soda, the carbonated ice continued to release gaseous carbon dioxide and, consequently, a continuous foaming action was observed and had an impact on the taste.

#### WHAT WE CLAIM IS:—

1. A frozen confection adapted to be mixed with an aqueous liquid to produce a beverage comprising a frozen body capable of melting and of producing carbonation of said liquid upon mixing therewith, and a frozen dessert body.

2. A frozen confection according to claim 1, in which said frozen body is carbonated ice or a body consisting of frozen elements, one of said elements being a frozen acid solution and the other of said elements being a frozen base solution.

3. A frozen confection according to claim 2, in which said frozen dessert body is positioned between said frozen elements.

4. A frozen confection according to any one of claims 1 to 3 containing flavoring and sweetening ingredients.

5. A frozen confection according to claim 4, containing flavoring and sweetening ingredients as a coating on said frozen dessert body.

6. A frozen confection according to any one of claims 1 to 5, in which said frozen dessert body is ice cream.

7. A frozen confection according to claim 1, comprising a body of ice cream, a mass of syrup containing a sweetening agent adhered to said body of ice cream, and a block of the frozen body adhered to said body of ice cream and out of contact with said mass of syrup.

8. A frozen confection according to claim 7, in which the frozen body is a block of carbonated ice.

9. A frozen confection according to claim 8, in which the body of ice cream has side surfaces and opposed end surfaces, the syrup is adhered to a major portion of said side surfaces of said body of ice cream, and the block of carbonated ice is adhered to one of said end surfaces.

10. A frozen confection according to claim 9, in which the body of ice cream is elongated in the shape of a cylinder and the mass of syrup covers at least 75 per cent of the area of the side surface of said cylinder.

11. A frozen confection according to claim 10, in which an area of said side surface of said cylinder of ice cream adjacent to said one end surface of said cylinder is substantially free of syrup. 35
12. A frozen confection according to either of claims 10 or 11, in which the cylinder is circular in cross section. 40
13. A frozen confection according to any one of claims 10 to 12, in which the block of carbonated ice adhered to said body of ice cream at one of said end surfaces thereof is cylindrical and has its margins inset from the margins of said body of ice cream. 45
14. A method of making a confection which upon contact with a suitable quantity of water forms an ice cream soda, comprising dispensing a quantity of syrup containing a sweetening agent in a tubular container having one end open and the other end closed until the syrup forms a thick layer against the closed end of the container, disposing a body of ice cream having a specific gravity less than that of the syrup in the container so that syrup is displaced and contacts surface portions of the body of ice cream, locating a block of carbonated ice on the body of ice cream, and freezing the syrup to maintain it in its displaced position. 50
15. A method according to claim 14, in which the carbonated ice is pressed so that the ice cream is forced into the syrup to displace a portion thereof to a position in which the syrup rises in the container and contacts additional surface portions of the ice cream. 55
16. A method according to claim 15, in which the block of carbonated ice extends beyond the open end of the container, a cover is positioned over the open end of the container to thereby press the carbonated ice so that the ice cream is forced into the syrup. 60
17. A method according to claim 16, in which the sum of the lengths of the body of ice cream and the block of carbonated ice are approximately the length of the container.
18. A method of making a confection substantially as hereinbefore described in Example III.
19. A process for preparing a carbonated frozen dessert-containing beverage which comprises adding the frozen confection according to any one of claims 1 to 13 to an ference to Examples I and II.
20. A frozen confection substantially as hereinbefore described with particular reference to Examples I and II.
21. A frozen confection substantially as hereinbefore described with particular reference to Example III.

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